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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This device is in conformity with the following EC/EMC directives:

- ❑ **EN 55022** Limits and methods of mesurement of radio disturbance characteristics of information technology equipment
- ❑ **EN 61000-3-2** Disturbances in supply systems caused
- ❑ **EN 61000-3-3** Disturbances in supply systems caused by household appliances and similar electrical equipment " Voltage fluctuations"
- ❑ **EN 55024** Information technology equipment-Immunity characteristics-Limits and methods of measurement
- ❑ **EN 60950** Safety for information technology equipment including electrical business equipment
- ❑ **CE marking** CE

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 **Introducing the Motherboard**	Describes features of the motherboard.	⇨ page 1
Chapter 2 **Installing the Motherboard**	Describes installation of motherboard components.	⇨ page 7
Chapter 3 **Using BIOS**	Provides information on using the BIOS Setup Utility.	⇨ page 21
Chapter 4 **Using the Motherboard Software**	Describes the motherboard software.	⇨ page 49
Chapter 5 **Trouble Shooting**	Provides basic trouble shooting tips.	⇨ page 53

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the **BSWI-D2** motherboard. This motherboard is a high performance, enhanced function. This motherboard has onboard Intel® Braswell SoC for high-end business or personal desktop markets.

It supports up to 8 GB of system memory with single channel DDR3L 1600MHz SO-DIMM.

It implements an EHCI (Enhanced Host Controller Interface) compliant interface that provides four USB 2.0 ports (two USB 2.0 ports at the rear panel and one 2*5-pin USB 2.0 header supports additional two USB 2.0 ports) and four USB 3.0 ports (two USB 3.0 ports at the rear panel and one USB 3.0 header supports additional two USB 3.0 ports).

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including one PS/2 Keyboard & PS/2 Mouse connectors, one D-sub (VGA) port, one COM port,one HDMI port, two USB 3.0 ports, two USB 2.0 ports, one RJ45 LAN connector and audio jacks for line-in, line-out and microphone.

In addition, this motherboard supports two SATA 6Gb/s connectors for expansion.

Package Contents

Your motherboard package ships with the following items:

- ❑ BSWI-D2 Motherboard
- ❑ User Manual
- ❑ DVD
- ❑ I/O Shield
- ❑ 2 SATA Cables

Accessories may vary, please refer to actual goods you purchase.

Specifications

SoC	• Onboard Intel® Braswell Pentium QC N3700/Celeron QC N3150/Celeron DC N3050 or other SoC • Supports TDP up to 6W *Note: Please go to ECS website for the latest CPU support list.*
Memory	• Signal channel DDR3L SO-DIMM memory architecture • 1 x 204-pin DDR3L SO-DIMM socket supports up to 8 GB • Supports DDR3L 1600 MHz DDR3 SDRAM *Note: Please go to ECS website for the latest Memory support list.*
Storage	• Supported by Intel® Braswell SoC - 2 x Serial ATA 6Gb/s devices
Audio	• Realtek ALC662 6-CH HD Audio CODEC - 6 Channel High Definition Audio Codec - Compliant with HD audio specification
LAN	• Realtek RTL8111H Gigabit LAN
Rear Panel I/O	• 1 x PS/2 Keyboard & PS/2 Mouse connectors • 1 x D-sub (VGA) port • 1 x COM port • 1 x HDMI port • 2 x USB 3.0 ports • 1 x RJ45 LAN connector • 2 x USB 2.0 ports • 1 x Audio port (1 x line-in, 1 x line-out, 1 x Microphone)
Internal I/O Connectors & Headers	• 1 x 24-pin ATX Power Supply connector • 1 x 4-pin CPU_FAN connector • 1 x 4-pin SYS_FAN connector • 1 x 2*5-pin USB 2.0 header supports additional two USB 2.0 ports • 2 x Serial ATA 6Gb/s connectors • 1 x BZ • 1 x Front Panel switch/LED header • 1 x Front Panel audio header • 1 x Clear CMOS jumper • 1 x Case open header • 1 x Parallel port header (LPT) • 1 x TPM header • 1 x EMMC header • 1 x USB 3.0 header • 1 x LPT header • 1 x COM header

System BIOS	•	AMI BIOS with 64Mb SPI Flash ROM - Supports Plug and Play - Supports ACPI & DMI - Supports STR (S3) /STD (S4) - Supports Hardware monitor - Audio, LAN, can be disabled in BIOS - F7 hot key for boot up devices option - Supports PgUp clear CMOS Hotkey (Has PS2 KB Model only)
Ap/ Bundled Software Support	•	Supports eBLU*[1]/eDLU/eSF
	•	3rd Party Bundled Software: Cyberlink Media Suite*[2]
		*Note: *[1]Microsoft .NET Framework 3.5 is required.* **[2]Free bundle software is including ECS DVD: Cyberlink Media Suite.*
Form Factor	•	Mini ITX Size, 170mm x 170mm

Motherboard Components

**BSWI-D2-N3700/BSWI-D2-N3150/BSWI-D2-N3050 MB image*

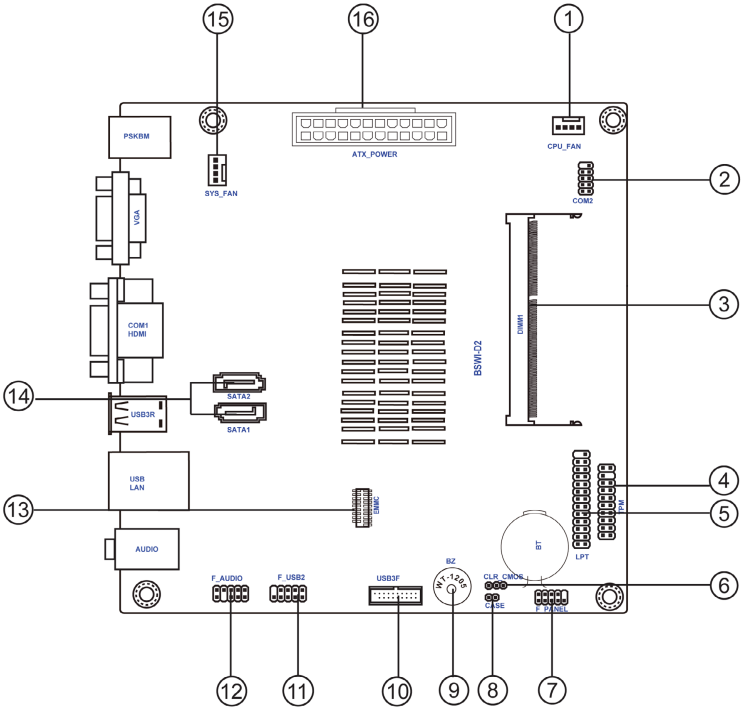
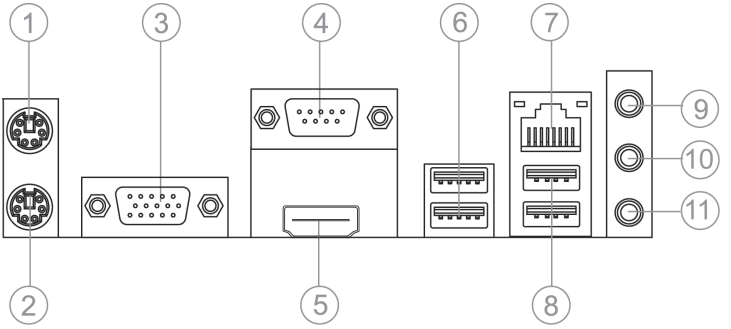


Table of Motherboard Components (*BSWI-D2-N3700/BSWI-D2-N3150/BSWI-D2-N3050 *)

LABEL	COMPONENTS
1. CPU_FAN	4-pin CPU cooling fan connector
2. COM2	Onboard serial port header
3. DIMM1	204-pin DDR3L SDRAM SO-DIMM
4. TPM	Trusted platform module header
5. LPT	Onboard parallel port header
6. CLR_CMOS	Clear CMOS jumper
7. F_PANEL	Front panel switch/LED header
8. CASE	Case open header
9. BZ	Buzzer
10. USB3F	Front panel USB 3.0 header
11. F_USB2	2*5 PIN Front USB 2.0 header
12. F_AUDIO	Front panel audio header
13. EMMC	EMMC header
14. SATA1~2	Serial ATA 6Gb/s connectors
15. SYS_FAN	4-pin system cooling fan connector
16. ATX_POWER	Standard 24-pin ATX Power connector

I/O Ports



1. PS/2 Mouse (green)
Use the upper PS/2 port to connect a PS/2 mouse.

2. PS/2 Keyboard (purple)
Use the lower PS/2 port to connect a PS/2 keyboard.

3. VGA Port
Connect your monitor to the VGA port.

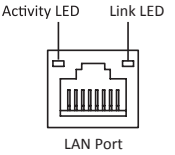
4. COM1 Port
Use the COM1 port to connect the serial devices such as mice or fax/modems.

5. HDMI Port
You can connect the display device to the HDMI port.

6. USB 3.0 Ports
Use the USB 3.0 port to connect USB 3.0 device.

7. LAN Port
Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

LAN LED	Status	Description
Activity LED	OFF	No data
	Orange blinking	Active
Link LED	OFF	No link
	Green	Link



8. USB 2.0 Ports
Use the USB 2.0 ports to connect USB 2.0 devices.

9. Line-in (blue)
It can be connected to an external CD/DVD player, Tape player or other audio devices for audio input.

10. Line-out (green)
It is used to connect to speakers or headphones.

11. Microphone (pink)
It is used to connect to a microphone.

Chapter 2
Installing the Motherboard

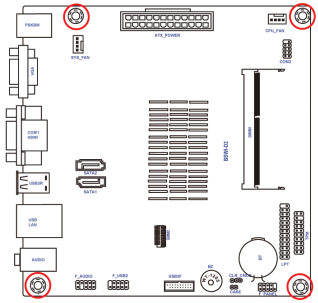
2-1. Safety Precautions

Follow these safety precautions when installing the motherboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard.
- Leave components in the static-proof bags.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

2-2. Installing the motherboard in a Chassis

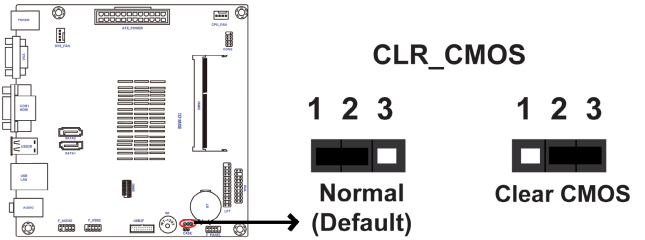
This motherboard carries a Mini ITX form factor of 170 x 170 mm. Choose a chassis that accommodates this form factor. Make sure that the I/O template in the chassis matches the I/O ports installed on the rear edge of the motherboard. Most system chassis have mounting brackets installed in the chassis, which corresponds to the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.



Do not over-tighten the screws as this can stress the motherboard.

2-3. Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



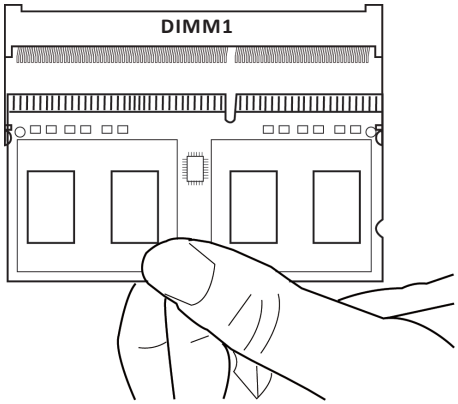
To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save and Exit Setup".

2-4. Installing Hardware

2-4-1. Installing Memory Modules

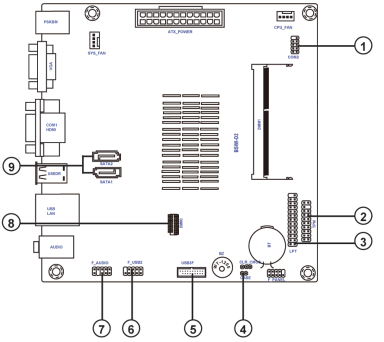
- This motherboard accommodates one memory module. It can support one 204-pin DDR3L 1600 MHz.
- Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.
- You must install one module in the slot. Total memory capacity is 8 GB.
- Refer to the following to install the memory modules.

Install the DIMM module into the slot and press it firmly down until it seats correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



2-4-2. Connecting Optional Devices

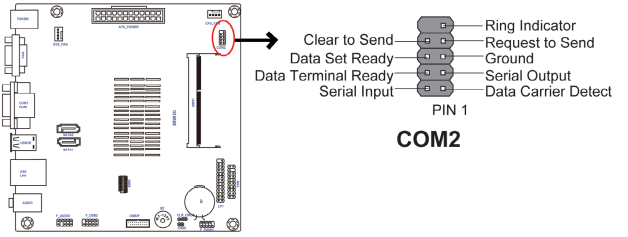
Refer to the following for information on connecting the motherboard's optional devices:



No.	Components	No.	Components
1	COM2	6	F_USB2
2	TPM	7	F_AUDIO
3	LPT	8	EMMC
4	CASE	9	SATA_1~2
5	USB3F	~	~

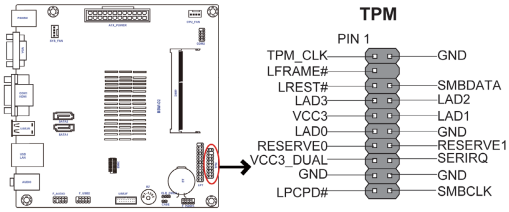
1. COM2: Onboard Serial Port Header

Connect serial port extension brackets to these headers to add serial ports to your system.



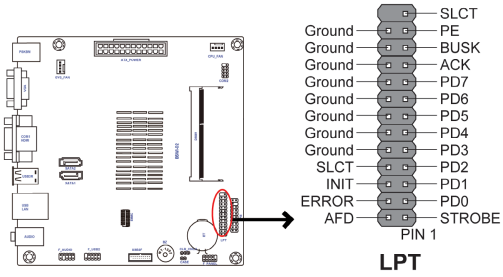
2. TPM: Trusted Platform Module header

Tursted Platform Module (TPM) is a publised specification detailing a micro controller that can store secured information, and implementations of that specification.



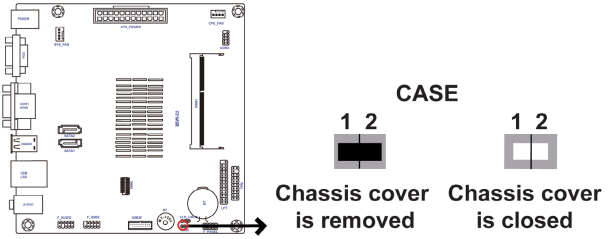
3. LPT: Onboard Parallel Port Header

This header can be used to connect to the printer, scanner or other devices.



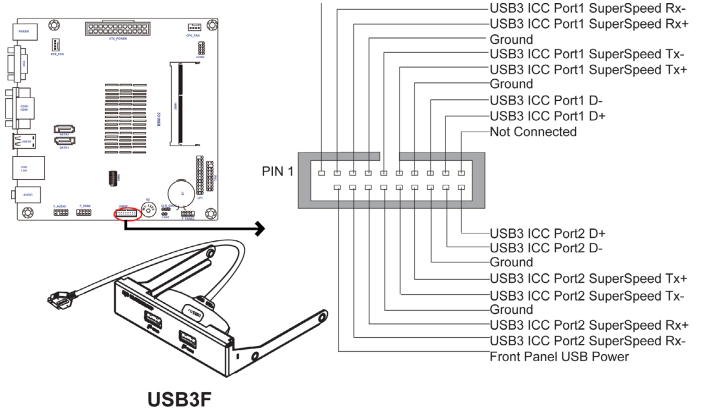
4. CASE: Chassis Intrusion Detect Header

This detects if the chassis cover has been removed. This functiion needs a chassis equipped with intrusion detection switch and needs to be enabled in BIOS.



5. USB3F: Front Panel USB 3.0 header

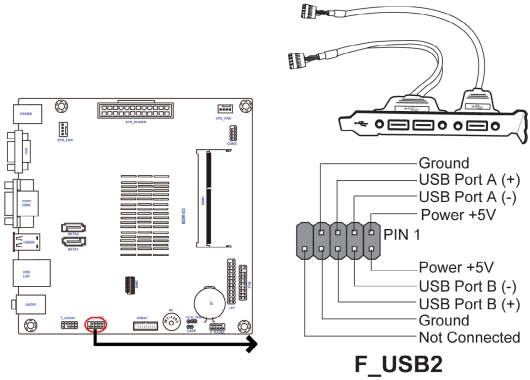
This Motherboard implements one USB 3.0 header supporting 2 extra front USB 3.0 ports, which delivers 5Gb/s transfer rate.



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

6. F_USB2: 2*5-pin Front Panel USB 2.0 Header

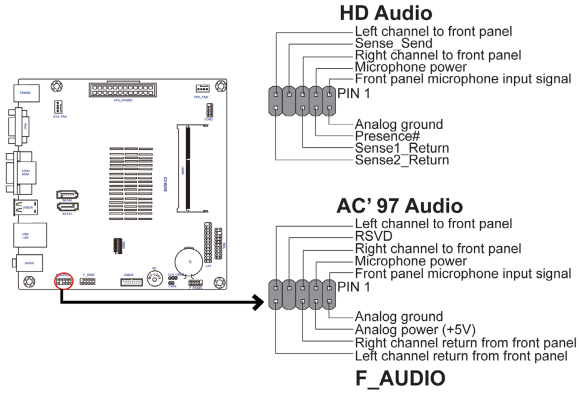
The motherboard has one 2*5-pin USB 2.0 header supporting two USB 2.0 ports. Additionally, some computer cases have USB 2.0 ports at the front of the case. If you have this kind of case, use auxiliary USB 2.0 connector to connect the front-mounted ports to the motherboard.



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

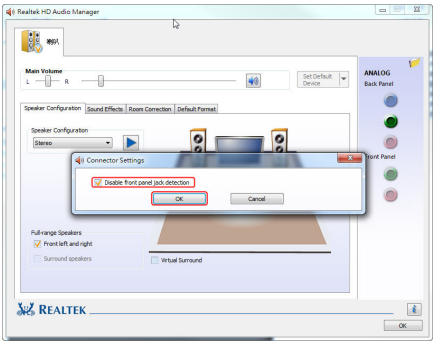
7. F_AUDIO: Front Panel Audio Header

The front panel audio header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access. This header supports HD audio by default. If you want connect an AC' 97 front panel audio to HD onboard headers, please set as below picture.



AC' 97 Audio Configuration: To enable the front panel audio connector to support AC97 Audio mode.

If you use AC' 97 Front Panel, please tick off the option of "Disabled Front Panel Detect ". If you use HD Audio Front Panel, please don' t tick off "Disabled Front Panel Detect ".

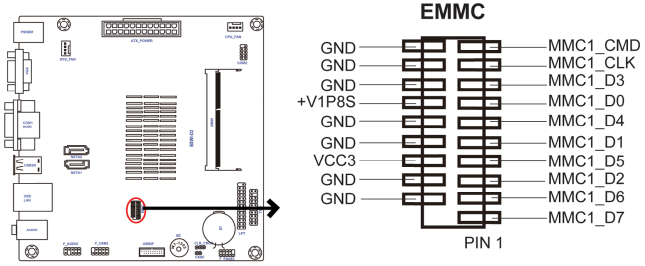


** For reference only*

If you use AC' 97 Front Panel, please don' t tick off "Using Front Jack Detect ". If you use HD Audio Front Panel, please tick off the option of "Using Front Jack Detect ".

** For reference only*

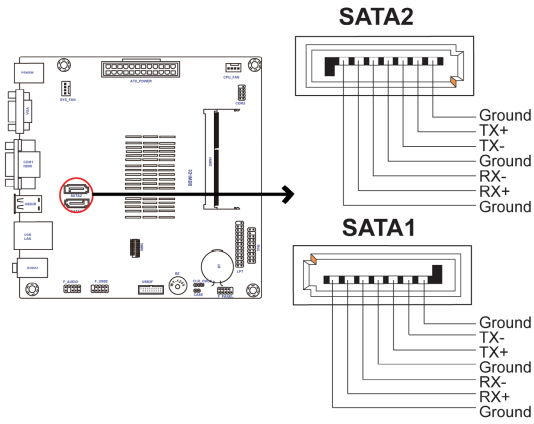
8. EMMC Header



The EMMC-BSW-32G card is not included in the package, you can buy it separately and install.

9. SATA1~2: Serial ATA Connectors

SATA 1~2 connectors support the Serial ATA 6Gb/s device, simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.



2-4-3. Installing a SATA Hard Drive

This section describes how to install a SATA Hard Drive.

About SATA Connectors

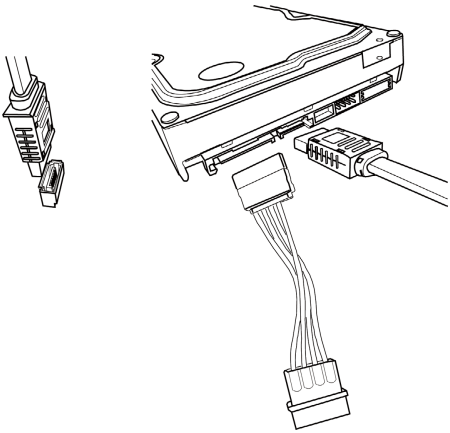
Your motherboard features two SATA connectors supporting a total of two drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

Refer to the illustration below for proper installation:

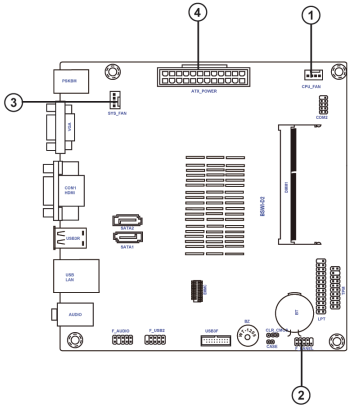
1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



** For reference only*

2-4-4. Connecting Case Components

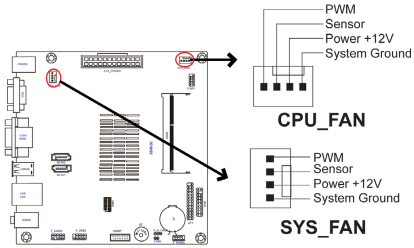
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:



No.	Components	No.	Components
1	CPU_FAN	3	SYS_FAN
2	F_PANEL	4	ATX_POWER

1 & 3. CPU_FAN (CPU Cooling FAN Connector) & SYS_FAN (System Cooling FAN Connector)

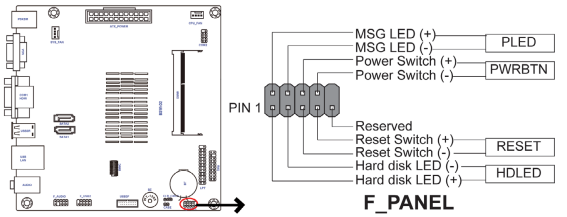
Connect the CPU cooling fan cable to **CPU_FAN**.
Connect the system cooling fan connector to **SYS_FAN**.



Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

2. F_PANEL: Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

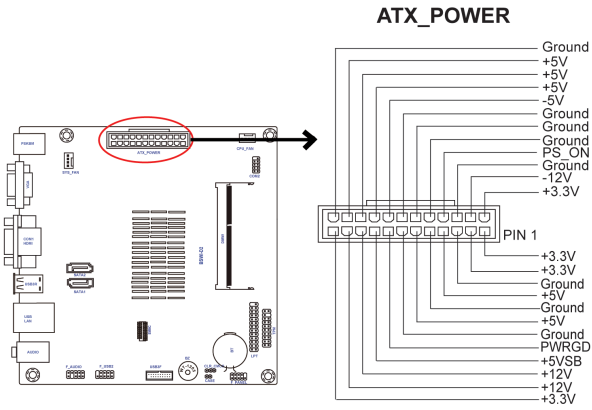
Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

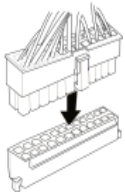
4. ATX_POWER (ATX 24-pin Power Connector)

Connect the standard power supply connector to **ATX_POWER**.



Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.



24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX match perfectly.

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

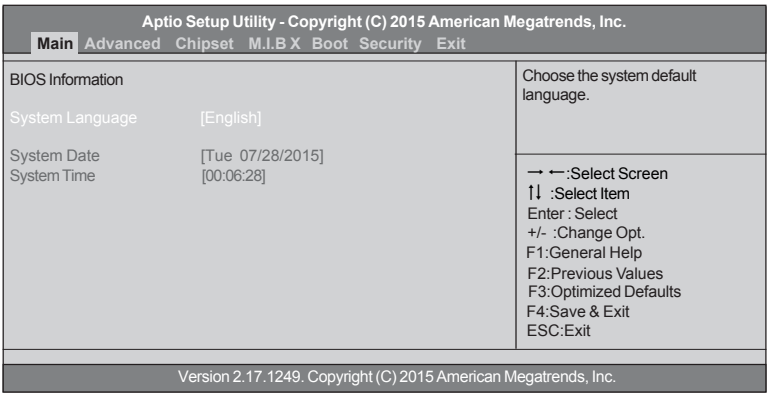
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

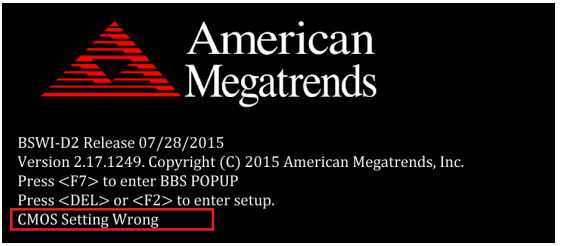
Press the delete key to access BIOS Setup Utility.



Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

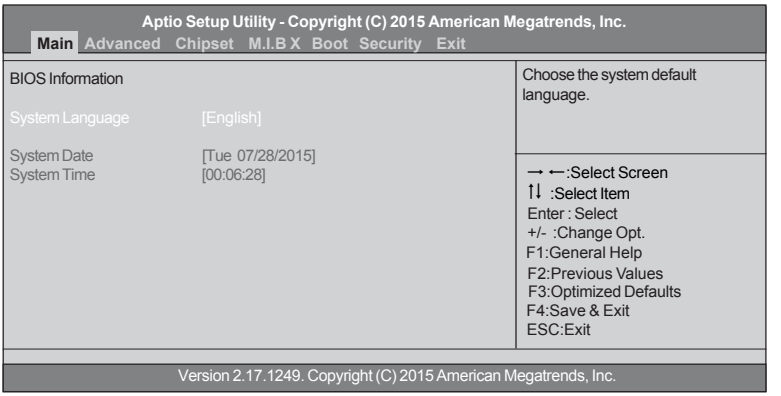
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Modifies the selected field's values
Enter	Select
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit

For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Main Menu

When you enter the BIOS Setup program, the main menu appears, giving you an overview of the basic system information. Select an item and press <Enter> to display the submenu.



System Language (English)

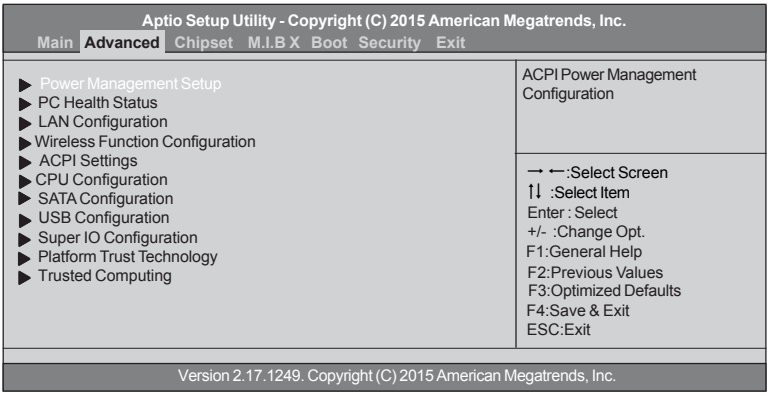
This item is used to set the language.

System Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

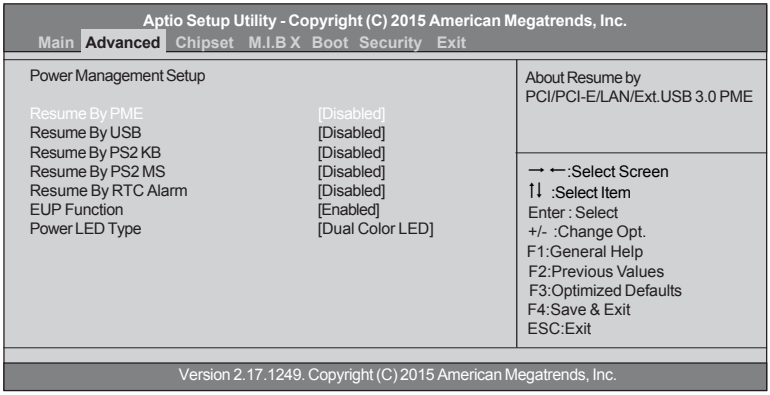
Advaned Menu

The Advanced menu items allow you to change the settings for the CPU and other system.



▶Power Management Setup

This page sets up some parameters for system power management operation.



Resume By PME (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI/PCI-E Modem or PCI/PCI-E LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI/PCI-E card.

Resume By USB (Disabled)

This item allows you to enable or disable the USB device wakeup function from S3 mode.

Resume By PS2 KB (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time basedon the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Resume By PS2 MS (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

Resume By RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

EUP Function (Enabled)

This item allows user to enable or disable EUP support.

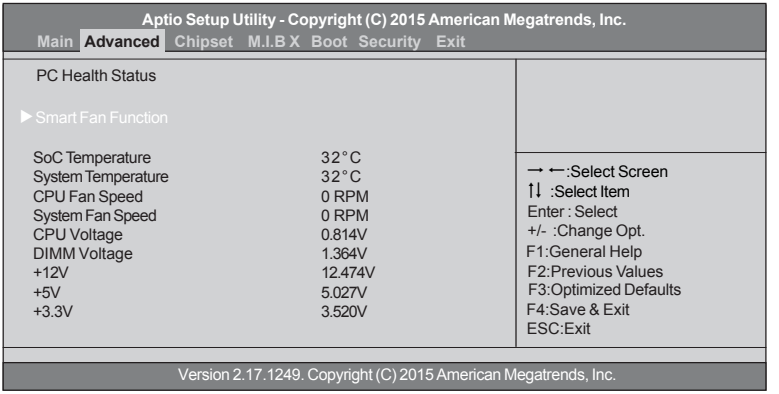
Power LED Type (Dual Color LED)

This item shows the type of the Power LED.

Press <Esc> to return to the Advanced Menu page.

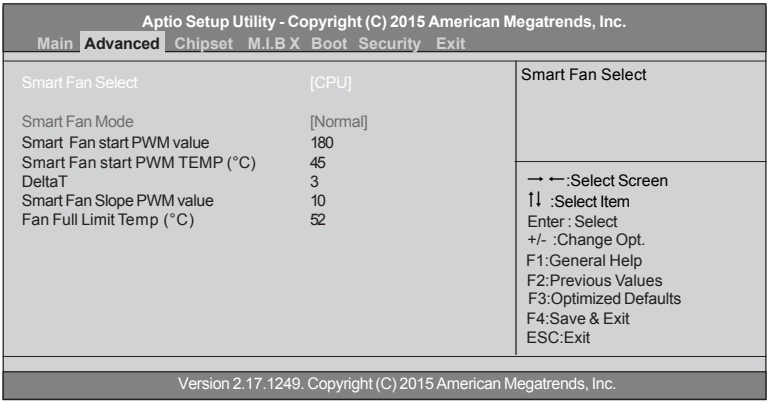
►PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the paremeters for critical voltages, temperatures and fan speeds.



►Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:



Smart Fan Select (CPU)

This item allows you to change and configure Smart Fans on CPU Fan or System Fan.

Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.

Smart Fan start PWM value (180)

This item is used to set the start PWM value of the smart fan.

Smart Fan start PWM TEMP (° C) (45)

This item is used to set the start temperature of the smart fan.

DeltaT (3)

This item specifies the range that controls CPU temperature and keeps it from going so high or so low when smart fan works.

Smart Fan Slope PWM value (10)

This item is used to set the Slope Select PWM of the smart fan.

Fan Full Limit Temp (° C) (52)

This item is used to monitor limit temperature when fan is full speed.

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

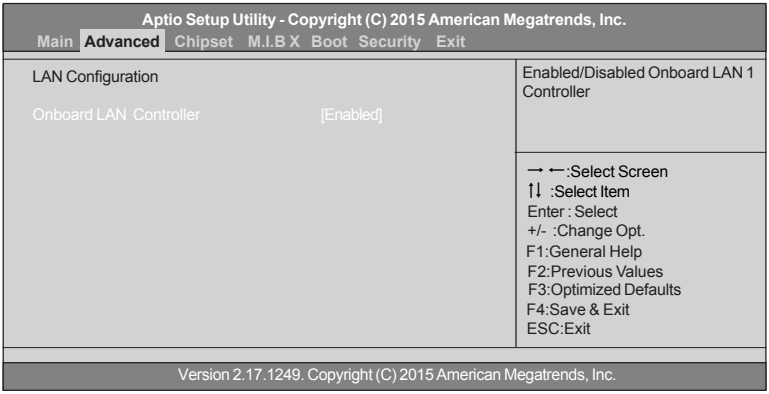
These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,... etc.

- SoC Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- CPU Voltage
- DIMM Voltage
- +12V
- +5V
- +3.3V

Press <Esc> to return to the Advanced Menu page.

►LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.



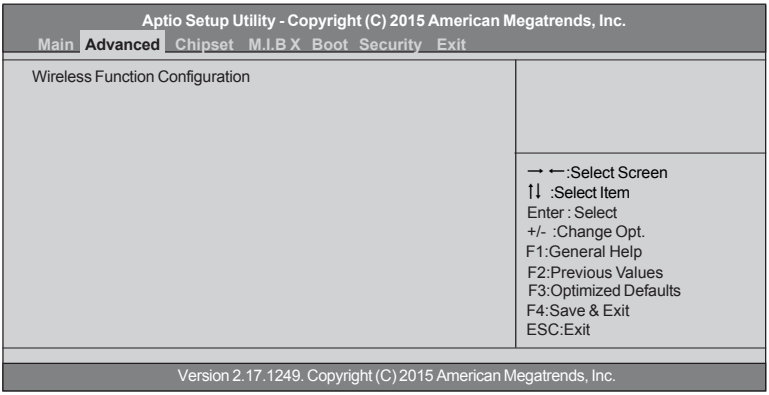
Onboard LAN Controller (Enabled)

Use this item to enable or disable the Onboard LAN.

Press <Esc> to return to the Advanced Menu page.

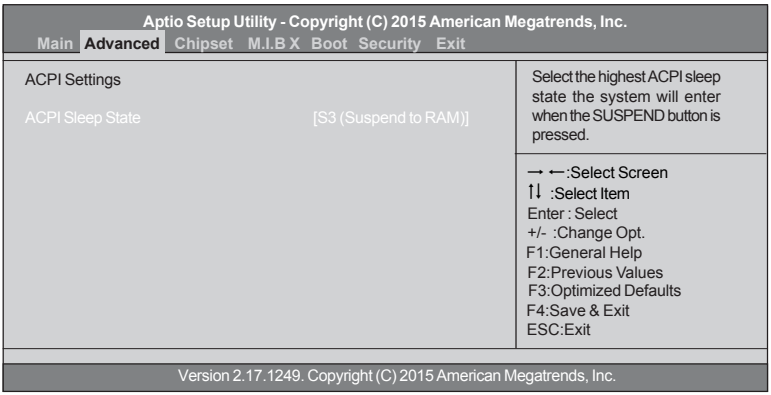
▶Wireless Function Configuration

The item in the menu shows the Wireless Fucntion Configuration.



►ACPI Settings

The item in the menu shows the highest ACPI sleep state when the system enters suspend.



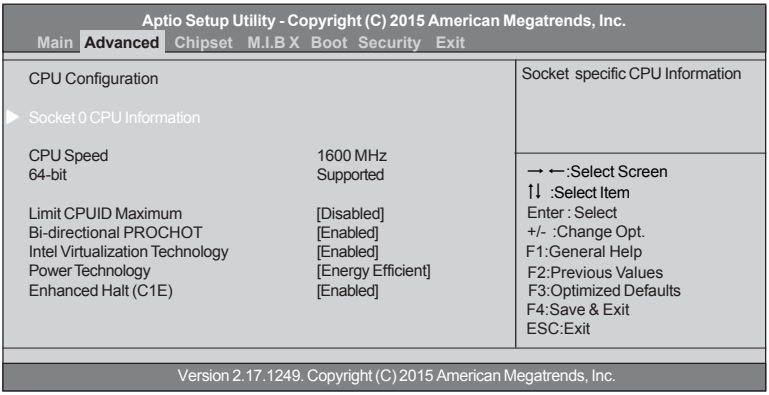
ACPI Sleep State (S3(Suspend to RAM))

This item allows user to enter the ACPI S3 (Suspend toRAM) Sleep State(default).

Press <Esc> to return to the Advanced Menu page.

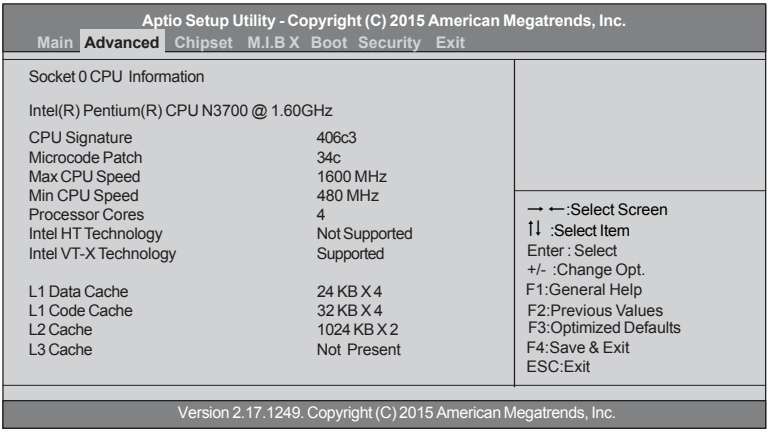
▶CPU Configuration

The item in the menu shows the CPU information.



▶Socket 0 CPU Information

Scroll to this item and press <Enter> to view the following screen:



Intel(R) Pentium(R) CPU N3700 @ 1.60GHZ

This is display-only field and displays the information of the CPU installed in your computer.

CPU Signature (406c3)

This item shows the information of the CPU signature.

Microcode Patch (34c)

This item shows the version of Microcode patch.

Max CPU Speed (1600 MHz)

This item shows the max speed of the CPU.

Min CPU Speed (480 MHz)

This item shows the min speed of the CPU.

Processor Cores (4)

This item shows the number of cores of the processor.

Intel HT Technology (Not Supported)

This item shows the computer supports Intel HT technology or not.

Intel VT-X Technology (Supported)

This item shows the computer supports Intel VT-X technology or not.

L1 Data Cache (24 KB X 4)

This item shows the size of CPU L1 Data Cache memory.

L1 Code Cache (32 KB X 4)

This item shows the size of CPU L1 Code Cache memory.

L2/L3Cache (1024 KB X 2/Not present)

These items show the size of CPU L2/L3 Cache memory.

Press <Esc> to return to the CPU Configuration page.

CPU Speed (1600 MHz)

This item shows the processor speed.

64-bit (Supported)

This item shows the CPU installed in your computer support 64-bit or not.

Limit CPUID Maximum (Disabled)

Use this item to enable or disable the maximum CPUID value limit, you can enable this to prevent the system from “rebooting” when trying to install Windows NT 4.0.

Bi-directional PROCHOT (Enabled)

Use this item to enable or disable the Bi-directional PROCHOT.

Intel Virtualization Technology (Enabled)

When enabled, a VMM can utilize the additional hardware capabilities provided by Vandor Pool Technology.

Power Technology (Energy Efficient)

This item enables or disables the power management features.

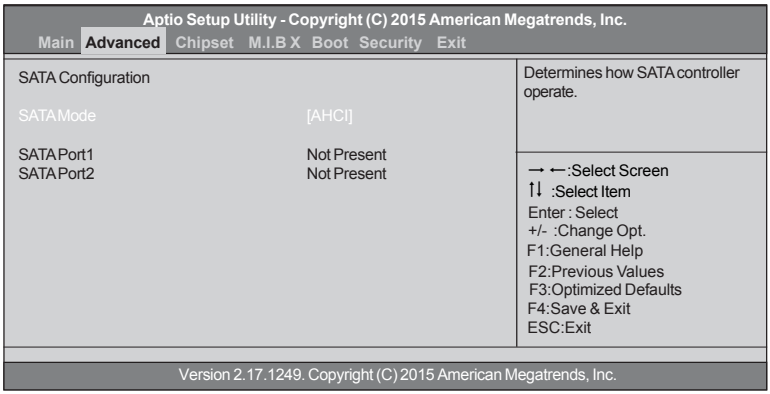
Enhanced Halt (C1E) (Enabled)

Use this item to enable the CPU energy-saving function when the system is not running.

Press <Esc> to return to the Advanced Menu page.

►SATA Configuration

Use this item to show the mode of serial SATA configuration options.



SATA Mode (AHCI)

Use this item to select SATA mode.

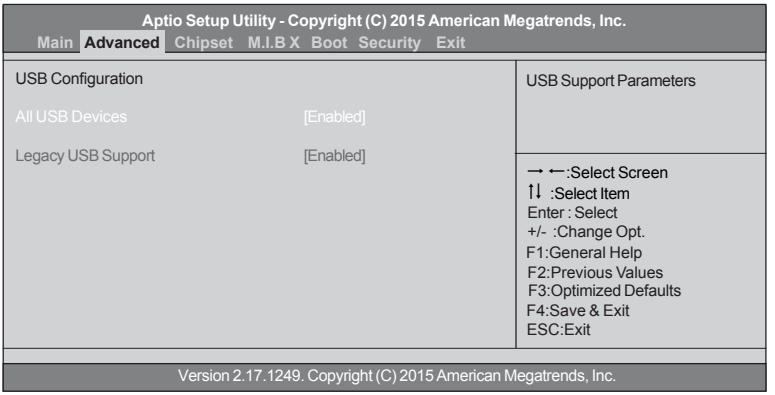
SATA Port1/2 (Not Present)

This motherboard supports two SATA channels, and each channel allows one SATA device to be installed. These items will display the information of devices installed.

Press <Esc> to return to the Advanced Menu page.

►USB Configuration

Use this item to show the information of USB configuration.



All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

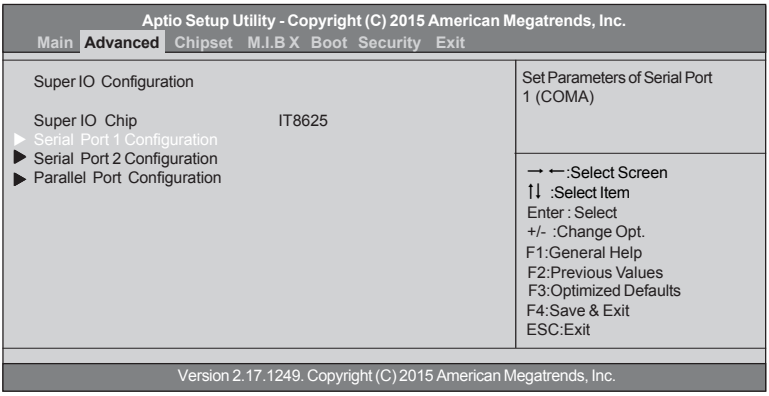
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the Advanced Menu page.

▶Super IO Configuration

Use this item to show the information of Super IO configuration.

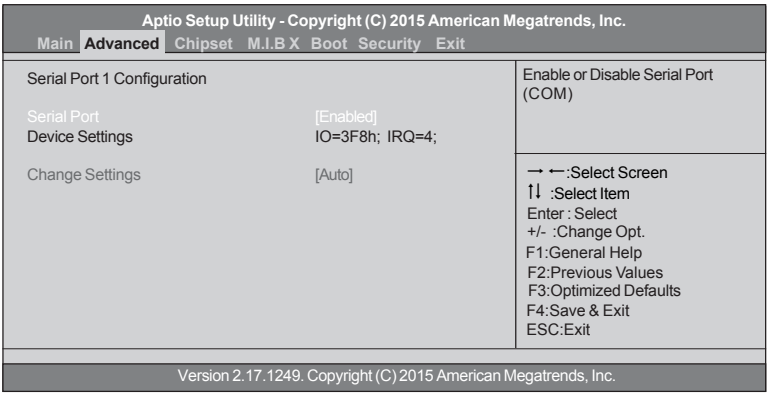


Super IO Chip (IT8625)

This item shows the information of the super IO chip.

▶Serial Port 1 Configuration

Scroll to this item and press <Enter> and view the following screen.



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

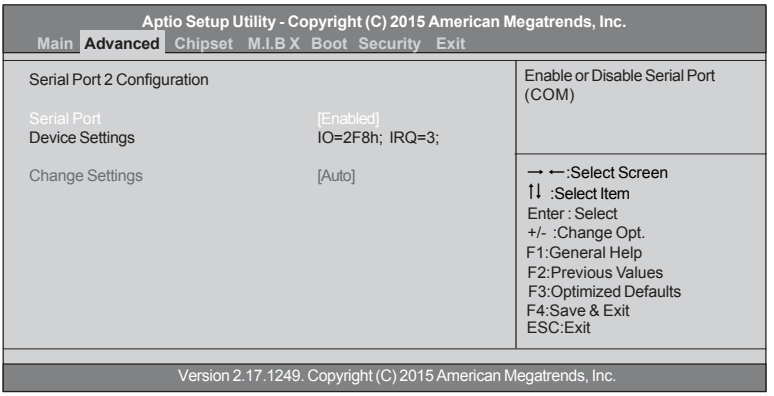
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

►Serial Port 2 Configuration

Scroll to this item and press <Enter> and view the following screen.



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=2F8h; IRQ=3)

This item shows the information of the device settings.

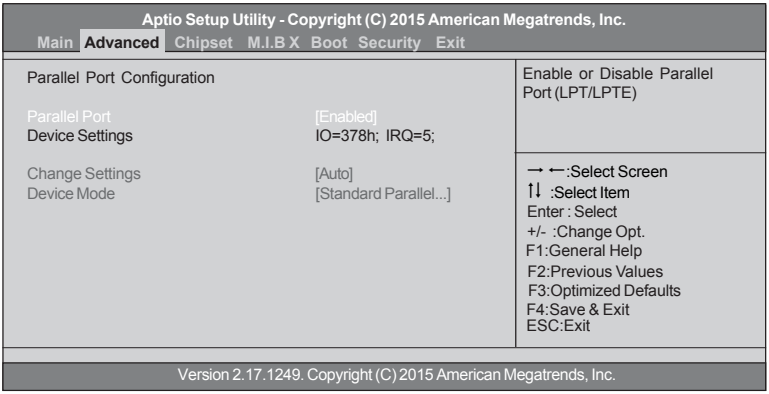
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

▶Parallel Port Configuration

Scroll to this item and press <Enter> and view the following screen.



Parallel Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=378h; IRQ=5)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item to change device settings.

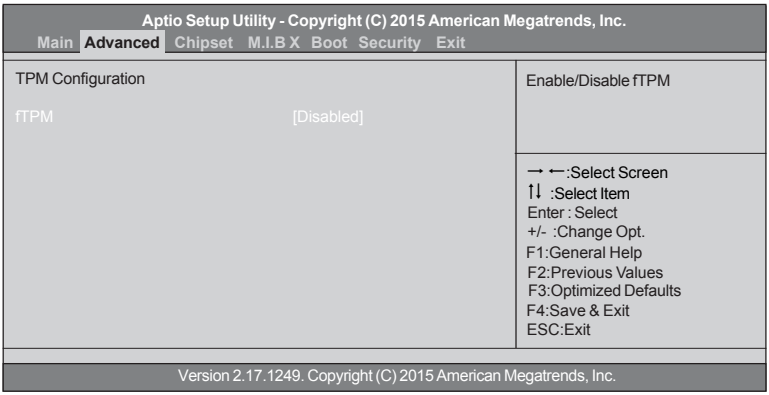
Device Mode (Standard Parallel...)

This item is used for Printer port mode selection, it can be set to Standard Parallel Port Mode (SPP) or EPP Mode.

Press <Esc> to return to the Super IO Configuration page.

►Platform Trust Configuration

Use this item to show the information of platform trust configuration.



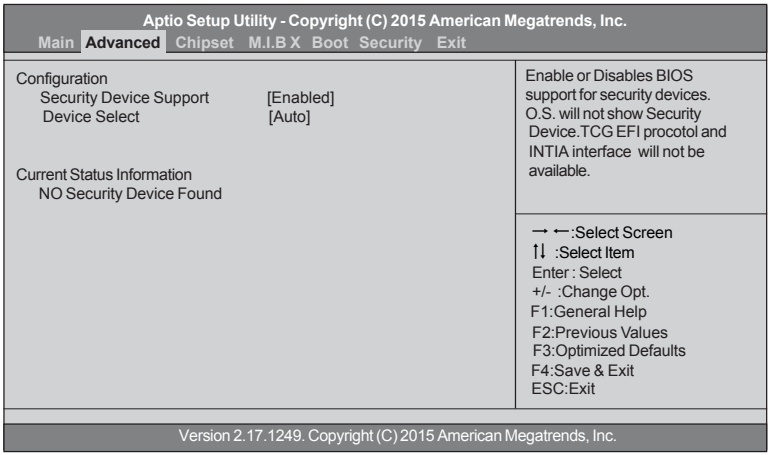
fTPM (Disabled)

Use this item to enable or disable the fTPM support.

Press <Esc> to return to the Advanced Menu page.

▶Trusted Computing

Use this item to show the information of trusted computing configuration.



Security Device Support (Enabled)

Enable or Disable BIOS support for security devices. O.S. will not show security devices. TCG EFI procotol and INTIA interface will not be available.

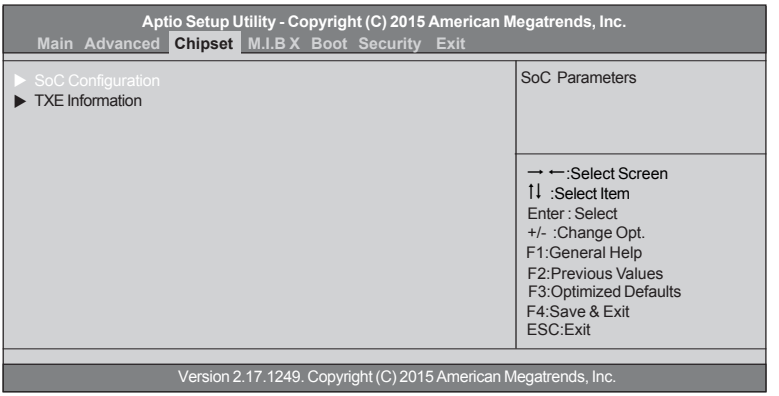
Device Select (Auto)

TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated.

Press <Esc> to return to the Advanced Menu page.

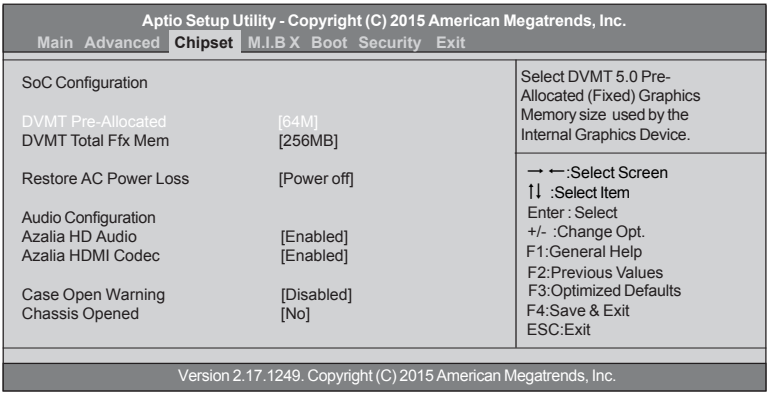
Chipset Menu

The chipset menu items allow you to change the settings for the SoC chip and other system.



►SoC Configuration

Scroll to this item and press <Enter> and view the following screen.



DVMT Pre-Allocated (64M)

This item is used to select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

DVMT Total Gfx Mem (256MB)

This item shows the information of DVMT 5.0 total graphic memory size used by Internal Graphics Device.

Restore AC Power Loss (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Audio Controller (Enabled)

This item enables or disables Audio controller.

Azalia HDMI Codec (Enabled)

This item enables or disables Azalia HDMI codec.

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

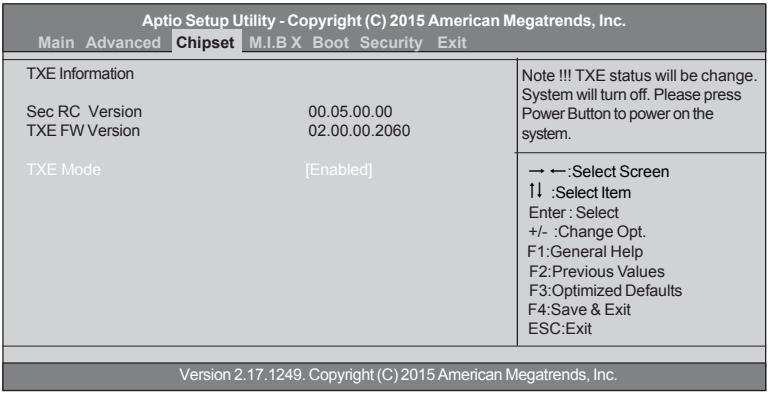
Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to return to the Chipset Menu page.

▶TXE Information

Scroll to this item and press <Enter> to view the following screen.



Sec RC Version (00.05.00.00)

This item shows the Sec Reference Code Version.

TXE FW Version (02.00.00.2060)

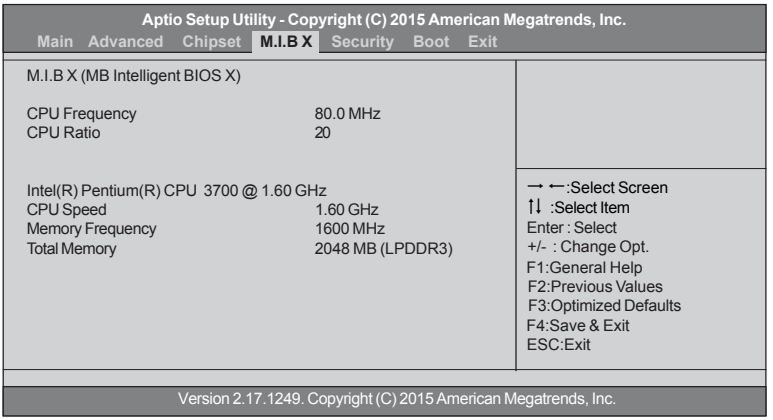
This item shows the TXE Firmware Version.

TXE Mode (Enabled)

This is TXE mode control item, it is used to enable or disable the TXE firmware.

M.I.B X (MB Intelligent BIOS X) Menu

This page displays the information of clock speeds and enables you to set the memory voltage for your system. The clock speeds are determined by the kind of processor installed in your system.



CPU Frequency (80.0 MHz)

This item shows the frequency of CPU reference clock.

CPU Ratio (20)

This item shows the max CPU ratio supported.

Intel(R) Pentimu(R) CPU 3700 @ 1.60 GHz

This is display-only field and displays the information of the CPU installed in your computer.

CPU Speed (1.60 GHz)

This item shows the CPU speed.

Memory Frequency (1600 MHz)

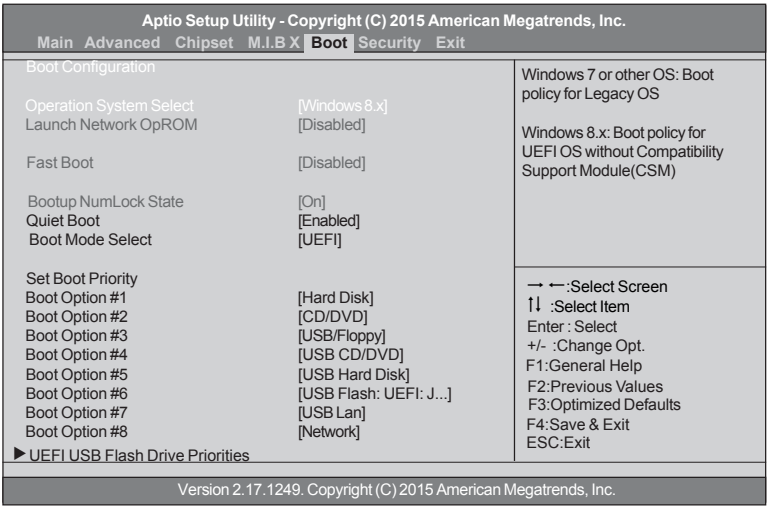
This item shows the memory frequency.

Total Memory (2048 MB (LPDDR3))

This item shows the total memory.

Boot Menu

This page enables you to set the keyboard NumLock state.



Operation System Select (Windows 8.x)

This item is used to select the operation system.

Launch Network OpROM (Disabled)

The item enables or disables launch Network Option ROM.

Fast Boot (Disabled)

Use this item to enable or disable the fast boot.

Bootup NumLock State (On)

This item enables you to select NumLock state.

Quiet Boot (Enabled)

Use this item to enable or disable the Quiet boot.

Boot Mode select (UEFI)

Use this item to select boot mode.

Set Boot Priority

This item enables you to set boot priority for all boot devices.

Boot Option #1/ 2/ 3/ 4/ 5/ 6/ 7/ 8

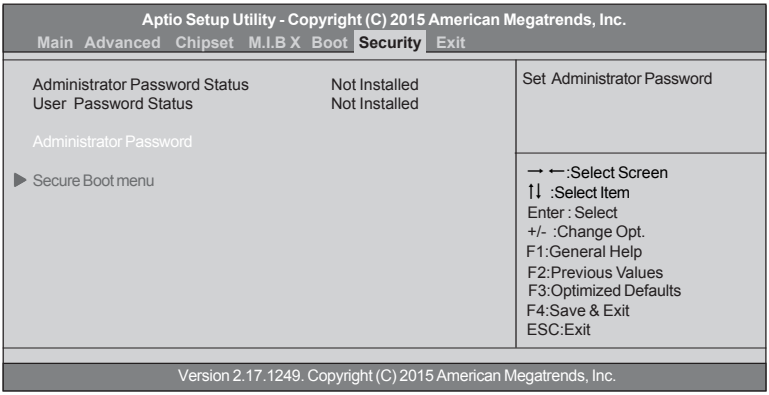
These items show the boot priorities and can be used to set the boot priorities of various device categories.

UEFI USB Flash Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing UEFI USB Flash drive. Press <Enter> to see the submenu.

Security Menu

This page enables you to set setup administrator and password.



Administrator Password Status (Not Installed)

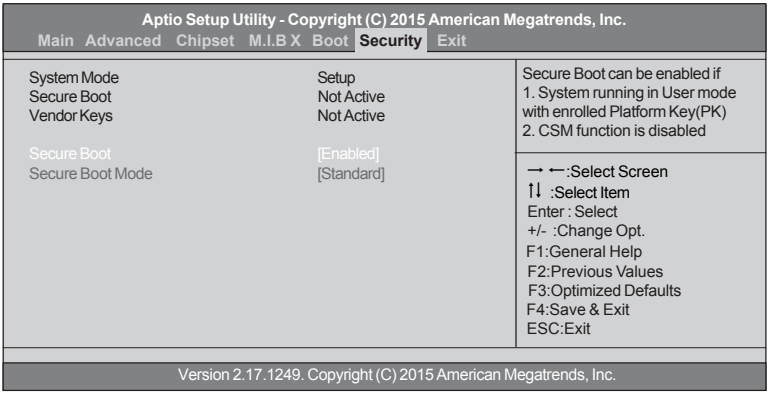
This item shows administrator password installed or not.

User Password Status (Not Installed)

This item shows user password installed or not.

►Secure Boot menu

Scroll to this item and press <Enter> to view the following screen.



System Mode (Setup)

This item shows system of secure boot (can be setup or user).

Secure Boot (Not Active)

This item shows the active state of secure boot.

Vendor Keys (Not Active)

This item shows the active state of vendor keys.

Secure Boot (Enabled)

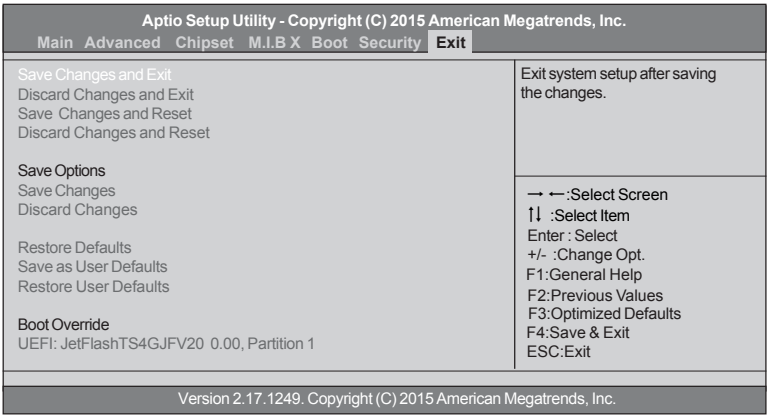
Use this item to enable or disable secure boot state.

Secure Boot Mode (Standard)

This item is used to select secure boot mode. When you select standard mode, secure boot policy is fixed; when you select custom mode, the image execution policy and secure boot key databases are changeable.

Exit Menu

This page enables you to exit system setup after saving or without saving the changes.



Save Changes and Exit

Use this item enables you to exit system setup after saving the changes.

Discard Changes and Exit

Use this item enables you to exit system setup without saving any changes.

Save Changes and Reset

Use this item enables you to reset the system setup after saving the changes.

Discard Changes and Reset

Use this item enables you to reset system setup without saving any changes.

Save Options

Use this item enables you to save the options that you have made.

Save Changes

Use this item enables you to save the changes that you have made.

Discard Changes

Use this item enables you to discard any changes that you have made.

Restore Defaults

Use this item enables you to restore the system defaults.

Save as User Defaults

Use this item enables you to save the changes that you have made as user defaults.

Restore User Defaults

Use this item enables you to restore user defaults to all the setup options.

Boot Override

Use this item enables you to set the device order.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

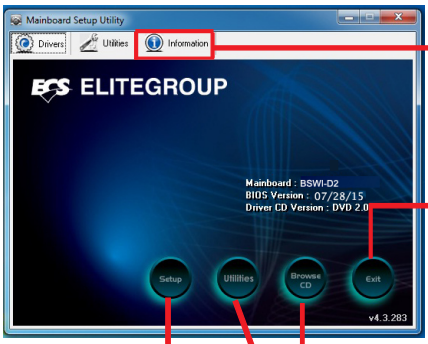
Memo

Chapter 4

Using the Motherboard Software

Auto-installing under Windows 7(x64)/8.1(x64)/10(x86/x64)

The auto-install DVD-ROM makes it easy for you to install the drivers and software. The support software DVD-ROM disc loads automatically under Windows 7(x64)/8.1(x64)/10(x86/x64). When you insert the DVD-ROM disc in the DVD-ROM drive, the auto-run feature will automatically bring up the installation screen. The screen has four buttons on it: **Setup**, **Utilities**, **Browse CD** and **Exit**.



Information:
Displays the path for all software and drivers available on the disk.

Click "**Exit**" button to close the Auto-Setup window.

Browse CD:
Open Windows Explorer and show the contents of the support disk.

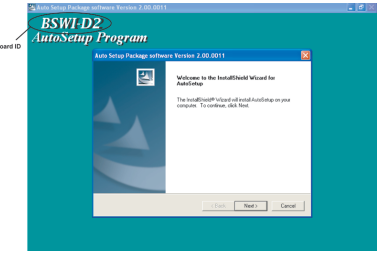
Click the "**Setup**" button to select and run the software installation program.

Click the "**Utilities**" button to select and install ECS Intelligent Utility.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

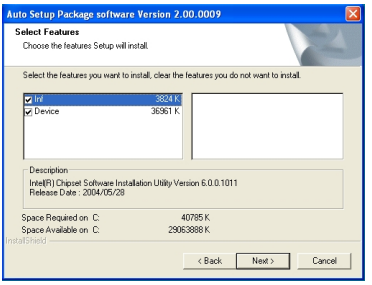
1. Click **Setup**. The installation program begins:



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

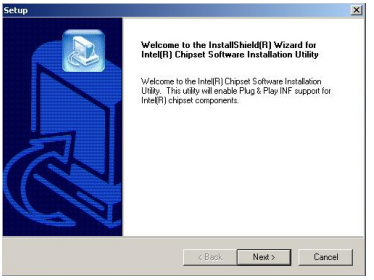
The motherboard identification is located in the upper left-hand corner.

2. Click **Next.** The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.

4. Click **Next** to run the Installation Wizard. An item installation screen appears:

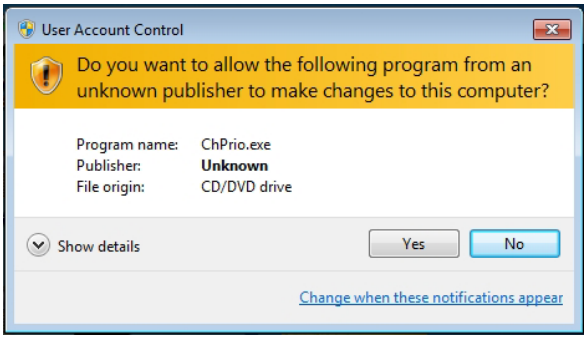


5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Windows 8 will show the following screen after system restart, you must select "Desktop" in the bottom left to install the next driver.

Windows 7/8 will appear below UAC (User Account Control) message after the system restart. You must select "Yes" to install the next driver. Continue this process to complete the drivers installation.



Manual Installation

If the auto-install DVD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Look for the chipset and motherboard model, and then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

ECS Utility Software (Intelligent EZ Utility) (Optional)

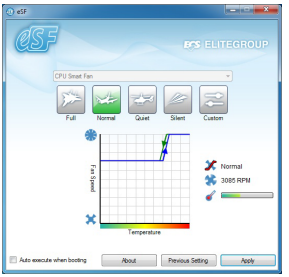
ECS Intelligent EZ Utility provides friendly interfaces under Windows O.S, which makes your computing more easily and conveniently.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

eSF

eSF(Smart Fan) utility provides easy and safe way to adjust fan speed in accordance with your PC's system loading and temperature.

It has five modes to adjust fan speed in a safe range without entering the BIOS to optimize your system cooling environment.



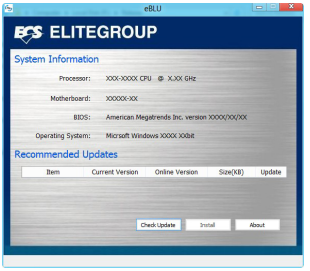
Microsoft .NET Framework 3.5 is required.

eDLU

ECS eDLU utility makes updating drivers fast and easy. eDLU saves time and hassle by listing all the latest drivers online. Just select the one you prefer and start to download and install the drivers.

eBLU

ECS eBLU utility makes BIOS update faster and easier. eBLU will list the latest BIOS with a default check-mark. Click"install" button to install.



Microsoft .NET Framework 3.5 is required.

Chapter 5
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips. You may also log onto our ECS website for more information: *http:// www.ecs.com.tw/ECSWebSite/Support/Support_FAQ.aspx?MenuID=49&childid=M_49&LanID=0*

a) System does not power up and the fans are not running.

1. Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Make sure the power cord is plugged into the wall socket & the switch on the Power Supply Unit (PSU) is turned " on " as well. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.

2. Check the VGA adapter card (if applicable) is inserted properly.

3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps: memory not detected
   b. 1 long beep and 8 short beeps: VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Apply the thermal grease onto the CPU heatsink & ensure the CPU fan is well-connected with the CPU heatsink. Check if the CPU fan is working properly while the system is running.

2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

4. Check whether there is any bulked up electrolytic capacitor or abnormal component.

Please logo onto our ECS website: http://www.ecs.com.tw/ECSWebSite/Support/Technical_Support_List.aspx?MenuID=50&LanID=0 for more information.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

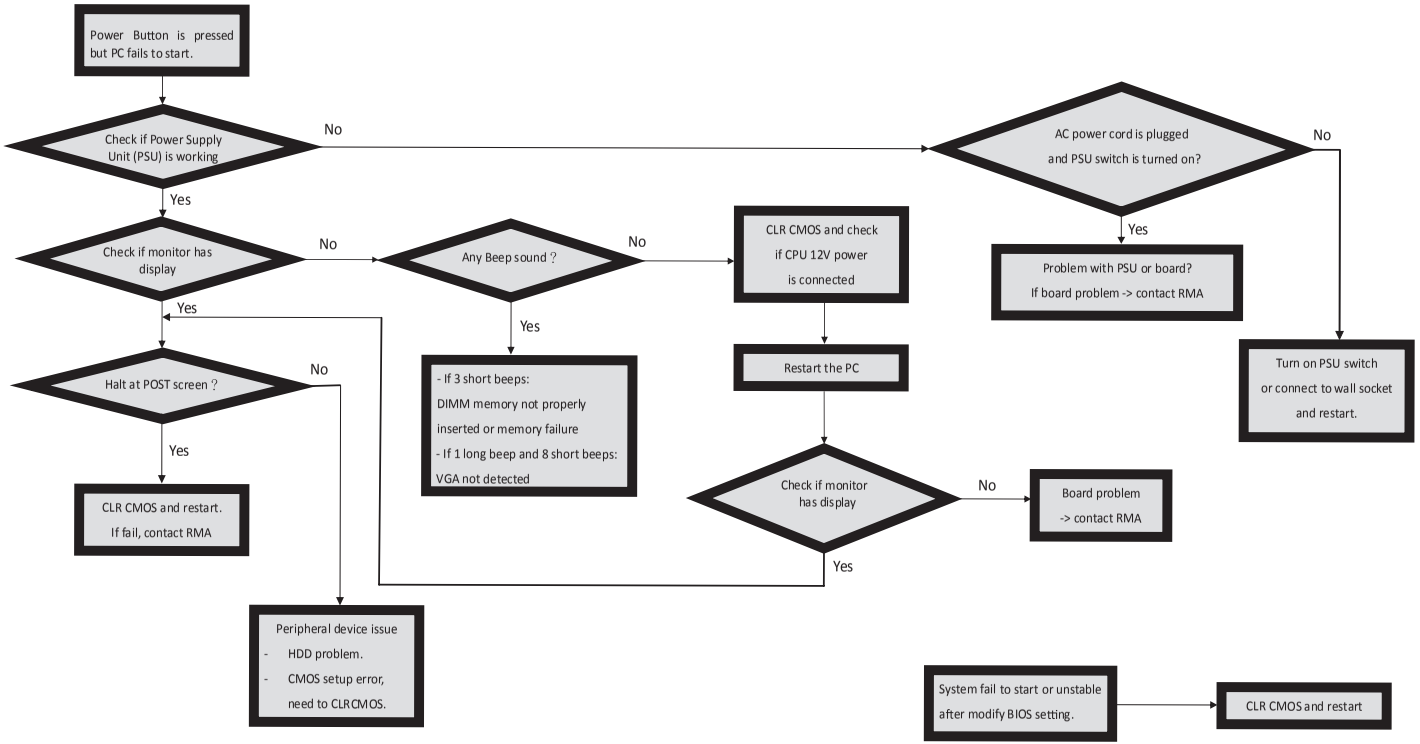
3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart



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